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CLAIMS 1-21

What is claimed is;

1. An immunostimulating peptide having an amino acid sequence  $X_1$ LYQYMDDV, wherein  $X_1$  is any hydrophobic amino acid.

2. The immunostimulating peptide of claim 1, wherein the amino acid sequence is VLYQYMDDV.

3. A medicament comprising:

- i) the immunostimulating peptide of claim 1; and,
- ii) a pharmaceutically acceptable excipient.

4. The medicament of claim 3, further comprising an immunostimulant.

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5. A method for preventing or treating an HIV-1 infection comprising administering a dose of the medicament of claim 3 in an amount effective to induce an immune response capable of preventing HIV-1 infection or reducing HIV-1 viral load in a patient.

6. The method of claim 5, wherein the patient is a human.

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7. A immunostimulating peptide or protein comprising the sequence  $X_1X_2$ YQYMDDV $X_3$  wherein

$X_1$  is a sequence of amino acid residues of between 0 and 200 residues in length;

$X_2$  is any hydrophobic amino acid; and,

$X_3$  is a sequence of amino acid residues of between 0 and 200 residues in length.

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8. A medicament comprising a vector including a nucleic acid comprising a nucleotide sequence encoding a peptide having the sequence  $X_1$ LYQYMDDV, wherein  $X_1$  is any hydrophobic amino acid, wherein introducing the medicament to a subject results in

expression of the nucleic acid, thereby inducing an immune response in the subject directed against an epitope of a product encoded by the nucleic acid.

9. The medicament of claim 8, wherein the vector is a virus.

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10. A method for preventing or treating an HIV-1 infection comprising administering a dose of the medicament of claim 8 in an amount effective to induce an immune response capable of preventing HIV-1 infection or reducing HIV-1 viral load in a patient.

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11. A method of <sup>(1)</sup>assessing <sup>(2)</sup>immune function or diagnosing exposure to HIV-1 for a subject, the method comprising:

- i) contacting a blood sample comprising T cells obtained from the subject with a peptide having an amino acid sequence X<sub>1</sub>LYQYMDDV, wherein X<sub>1</sub> is any hydrophobic amino acid; and,
- ii) determining an immune response of the subject's T cells to the peptide. ?

12. The method of claim 11, wherein said determining step (ii) is performed by assaying for IFN-γ production, or lysis of cells displaying the peptide by cytotoxic T lymphocytes induced with the peptide.

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13. A fusion molecule comprising an amino acid sequence X<sub>1</sub>LYQYMDDV, wherein X<sub>1</sub> is any hydrophobic amino acid.

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14. The fusion molecule of claim 13, further comprising an amino acid sequence for an HIV-1 viral protein

15. The fusion molecule of claim 13, further comprising a glycolipid.

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16. The fusion molecule of claim 13, further comprising an amino acid sequence for an immunostimulating carrier protein.

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17. A peptide or protein comprising an amino acid sequence X<sub>1</sub>LYQYMDDV, wherein X<sub>1</sub> is any hydrophobic amino acid.

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18. The peptide or protein of claim 17, further comprising an acetylated N-terminus.

19. The peptide or protein of claim 17, further comprising a modification to the C-terminus, the modification selected from the group consisting of amidation, esterification, and reduction of a C-terminal amino acid carboxyl group..

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20. A medicament comprising a peptide of claim 1 pulsed onto dendritic cells.

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21. A medicament comprising dendritic cells transduced with a vector of claim 8